We Claim

1) A process for the enhanced recovery of recombinant insulin comprising, treating the expression broth/culture medium containing the expressing cells either with water miscible organic solvents and/or with salts and/or with amino acids and/or at different pH conditions, wherein the concentration of the insulin *in solution* is higher, than had the expression broth or culture medium not been treated with the said conditions.
2) A process for the enhanced recovery of recombinant insulin comprising, treating the expression broth/culture medium containing the expressing cells either with urea, wherein the concentration of the insulin *in solution* is higher, than had the expression broth or culture medium not been treated with urea.
3) A process according to claim 1 where the treatment is carried out from about pH 2.0 to about pH 5.0
4) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with Arginine, at a pH from about 2 to about 4.
5) A process according to claim 4 wherein the concentration of arginine is from about 1 to about 100 mM.
6) A process according to claim 4 wherein the arginine concentration is from about 50 mM to about 100 mM.
7) A process according to claim 4 wherein the arginine concentration is from about 70 mM to about 100 mM.
8) A process according to claim 4 wherein the arginine concentration is about 100 mM.
9) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with Aspartic acid, at a pH from about 2 to about 4.
10) A process according to claim 9 wherein the concentration of aspartic acid is from about 1 mM to about 100 mM.
11) A process according to claim 9 wherein the aspartic acid concentration is from about 50 mM to about 100 mM.
12) A process according to claim 9 wherein the aspartic acid concentration is from about 70 mM to about 100 mM.
13) A process according to claim 9 wherein the aspartic acid concentration is about 100 mM.
14) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with calcium chloride, at a pH from about 2 to about 4.
15) A process according to claim 14 wherein the concentration of calcium chloride is from about 1 mM to about 100 mM.
16) A process according to claim 14 wherein the calcium chloride concentration is from about 50 mM to about 100 mM.
17) A process according to claim 14 wherein the calcium chloride concentration is from about 70 mM to about 100 mM.
18) A process according to claim 14 wherein the calcium chloride concentration is about 100 mM.
19) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with isopropanol, at a pH from about 2 to about 5.

20) A process according to claim 19 where the concentration of isopropanol is from about 1 percent to about 50 percent.
21) A process according to claim 19 where the isopropanol concentration is from about 10 percent to about 50 percent.
22) A process according to claim 19 where the isopropanol concentration is from about 30 percent to about 50 percent.
23) A process according to claim 19 where the isopropanol concentration is from about 40 percent to about 50 percent.
24) A process according to claim 19 where the isopropanol concentration is about 20 percent.
25) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with methanol, at a pH from about 2 to about 5.
26) A process according to claim 25 where the concentration of methanol is from about 1 percent to about 50 percent.
27) A process according to claim 25 where the methanol concentration is from about 10 percent to about 50 percent.
28) A process according to claim 25 where the methanol concentration is from about 30 percent to about 50 percent.
29) A process according to claim 25 where the methanol concentration is from about 40 percent to about 50 percent.
30) A process according to claim 25 where the methanol concentration is about 20 percent.
31) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with ethanol, at a pH from about 2 to about 5.
32) A process according to claim 31 where the concentration of ethanol is from about 1 percent to about 50 percent.
33) A process according to claim 31 where the ethanol concentration is from about 10 percent to about 50 percent.
34) A process according to claim 31 where the ethanol concentration is from about 30 percent to about 50 percent.
35) A process according to claim 31 where the ethanol concentration is from about 40 percent to about 50 percent.
36) A process according to claim 31 where the ethanol concentration is about 20 percent.
37) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with tertiary-butanol, at a pH from about 2 to about 5.
38) A process according to claim 37 where the concentration of tertiary-butanol is from about 1 percent to about 50 percent.
39) A process according to claim 37 where the tertiary-butanol concentration is from about 10 percent to about 50 percent.
40) A process according to claim 37 where the tertiary-butanol concentration is from about 30 percent to about 50 percent.
41) A process according to claim 37 where the tertiary-butanol concentration is from about 40 percent to about 50 percent.
42) A process according to claim 37 where the tertiary-butanol concentration is about 20 percent.

43) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with acetonitrile, at a pH from about 2 to about 5.
44) A process according to claim 43 where the concentration of acetonitrile is from about 1 percent to about 50 percent.
45) A process according to claim 43 where the acetonitrile concentration is from about 10 percent to about 50 percent.
46) A process according to claim 43 where the acetonitrile concentration is from about 30 percent to about 50 percent.
47) A process according to claim 43 where the acetonitrile concentration is from about 40 percent to about 50 percent.
48) A process according to claim 43 where the acetonitrile concentration is about 20 percent.
49) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with dimethylformamide.
50) A process according to claim 49 where the concentration of dimethylformamide is from about 1 percent to about 50 percent.
51) A process according to claim 49 where the dimethylformamide concentration is from about 10 percent to about 50 percent.
52) A process according to claim 49 where the dimethylformamide concentration is from about 30 percent to about 50 percent.
53) A process according to claim 49 where the dimethylformamide concentration is from about 40 percent to about 50 percent.
54) A process according to claim 49 where the dimethylformamide concentration is about 20 percent.
55) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with dimethylsulfoxide, at a pH from about 2 to about 5.
56) A process according to claim 55where the concentration of dimethylsulfoxide is from about 1 percent to about 50 percent.
57) A process according to claim 55 where the dimethylsulfoxide concentration is from about 10 percent to about 50 percent.
58) A process according to claim 55 where the dimethylsulfoxide concentration is from about 30 percent to about 50 percent.
59) A process according to claim 55 where the dimethylsulfoxide concentration is from about 40 percent to about 50 percent.
60) A process according to claim 55 where the dimethylsulfoxide concentration is about 20 percent.
61) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with ethylene glycol, at a pH from about 2 to about 5.
62) A process according to claim 61 where the concentration of ethylene glycol is from about 1 percent to about 50 percent.
63) A process according to claim 61 where the ethylene glycol concentration is from about 10 percent to about 50 percent.
64) A process according to claim 61 where the ethylene glycol concentration is from about 30 percent to about 50 percent.

65) A process according to claim 61 where the ethylene glycol concentration is from about 40 percent to about 50 percent.

66) A process according to claim 61 where the ethylene glycol concentration is about 20 percent.

67) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with propylene glycol, at a pH from about 2 to about 5.

68) A process according to claim 67 where the concentration of ethylene glycol is from about 1 percent to about 50 percent.

69) A process according to claim 67 where the propylene glycol concentration is from about 10 percent to about 50 percent.

70) A process according to claim 67 where the propylene glycol concentration is from about 30 percent to about 50 percent.

71) A process according to claim 67 where the propylene glycol concentration is from about 40 percent to about 50 percent.

72) A process according to claim 67 where the propylene glycol concentration is about 20 percent.

73) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with acetic acid, at a pH from about 2 to about 5.

74) A process according to claim 73where the concentration of acetic acid is from about 1 percent to about 50 percent.

75) A process according to claim 73 where the acetic acid concentration is from about 10 percent to about 50 percent.

76) A process according to claim 73 where the acetic acid concentration is from about 30 percent to about 50 percent.

77) A process according to claim 73 where the acetic acid concentration is from about 40 percent to about 50 percent.

78) A process according to claim 73 where the acetic acid concentration is about 20 percent.

79) A process as in claim 1 comprising, treatment of the expression broth/culture medium containing the expressing cells with dioxan, at a pH of about 2 to about 5.

80) A process according to claim 79 where the concentration of dioxan is from about 1 percent to about 20 percent.

81) A process according to claim 79 where the dioxan concentration is from about 10 percent to about 20 percent.

82) A process according to claim 79 where the dioxan concentration is from about 15 percent to about 20 percent.

83) A process according to claim 79 where the dioxan concentration is about 20 percent.

84) A process as in claim 2 comprising, treatment of the expression broth/culture medium containing the expressing cells with urea, at about pH of about 2 to about 5.

85) A process according to claim 84 where the concentration of urea is from about 1M to about 6M.

86) A process according to claim 84 where the urea concentration is from about 3M to about 6M.

87) A process according to claim 84 where the urea concentration is 6M.

88) A process for the enhanced recovery of recombinantly expressed insulin into solution, comprising, treatment of the expression broth/culture medium containing the expressing cells with isopropanol at pH about 2, followed by removal of the supernatant, followed by extraction(s).

89) A process for the enhanced recovery of recombinantly expressed insulin into solution according to claim 88, comprising at least two extraction steps with isopropanol, of the expression broth/culture medium containing the expressing cells, at pH about 2.

90) A process according to claim 89 wherein the concentration of isopropanol used in each step is same or different.

91) A process according to claim 90 wherein the concentration of isopropanol used in each step is different.

92) A process according to claim 90 wherein the concentration of isopropanol used in each step is same.

93) A process according to claim 92 wherein the concentration of isopropanol used is, from about 1 percent to about 50 percent.

94) A process according to claim 92 wherein the isopropanol concentration is from about 10 percent to about 50 percent.

95) A process according to claim 92 wherein the isopropanol concentration is from about 30 percent to about 50 percent.

96) A process according to claim 92 wherein the isopropanol concentration is from about 40 percent to about 50 percent.

97) A process according to claim 92 wherein the isopropanol concentration is about 20 percent.

98) A process for the enhanced recovery of recombinantly expressed insulin into solution, comprising of sequential extraction of the expression broth/culture medium containing the expressing cells with at least two of following steps, but not necessarily in the same order :

a) citrate buffer at about pH 2 to about pH 5
b) about 0.2 M to about 1.0 M sodium chloride at about pH 2 to about pH 5
c) about 10 percent to about 50 percent isopropanol at about pH 2 to about pH 5
d) about 1M to about 5M urea at about pH 2
e) about 1M to about 5M urea at about pH 4.

99) A process for the isolation and purification of insulin from recombinant sources consisting of subjecting the expression broth/culture medium containing the expressing cells to chromatography in an expanded mode.

100) A process as in claim 99 wherein the chromatography is ion exchange chromatography.

101) A process according to claim 100 wherein the ion exchange chromatography is cation exchange chromatography.

102) A process according to claim 101 in which the fermentation broth/culture medium containing the expressing cells is diluted with buffer at about pH 3, then fed to column packed with Streamline-SP cation exchange resin, followed by washing with buffer at about pH 4 and then followed by elution with buffer at about pH 7.5.

103) A process according to claim 101, wherein the dilution buffer is citrate buffer, wash buffer is citrate buffer.

104) A process according to claim 101, wherein the elution buffer is Tris HCl buffer

105) A process according to claim 101, wherein the dilution buffer is citrate buffer, wash buffer is citrate buffer and the elution buffer is Tris HCl buffer

106) A process for the isolation and purification of insulin from recombinant sources consisting of treatment of the expression broth/culture medium containing the expressing cells with water miscible organic solvent followed by chromatography in an expanded bed mode.

107) A process as in claim 106 wherein the chromatography is ion exchange chromatography.

108) A process according to claim 107, wherein the ion exchange chromatography is cation exchange chromatography.

109) A process according to claims 108 wherein the said water miscible organic solvent is isopropanol.

110) A process according to claim 109 wherein the treatment is carried out with isopropanol at a concentration of about 5 percent to about 90 percent and at a pH of about 1 to about 4.

111) A process according to claim 109 wherein the treatment is carried out with isopropanol at a concentration of about 10 percent to about 50 percent and at a pH of about 3.

112) A process according to claim 109 wherein the treatment is carried out with isopropanol at a concentration of about 20 percent to about 50 percent and at a pH of about 3.

113) A process according to claim 109 wherein the treatment is carried out with isopropanol at a concentration of about 20 percent and at a pH of about 3.

114) A process according to claim 108 wherein the treatment is carried out with isopropanol at a concentration of about 20 percent and pH of about 3.

115) A process according to claims 108 wherein the said water miscible organic solvent is methanol.

116) A process according to claim 115 wherein the treatment is carried out with methanol at a concentration of about 5 percent to about 90 percent and at a pH of about 1 to about 4.

117) A process according to claim 115 wherein the treatment is carried out with methanol at a concentration of about 10 percent to about 50 percent and at a pH of about 3.

118) A process according to claim 115 wherein the treatment is carried out with methanol at a concentration of about 20 percent to about 50 percent and at a pH of about 3.

119) A process according to claim 115 wherein the treatment is carried out with methanol at a concentration of about 20 percent and at a pH of about 3.

120) A process according to claim 115 wherein the treatment is carried out with methanol at a concentration of about 20 percent and pH of about 3.

121) A process according to claims 108 wherein the said water miscible organic solvent is dimethylformamide.

122) A process according to claim 121 wherein the treatment is carried out with dimethylformamide at a concentration of about 5 percent to about 70 percent and at a pH of about 1 to about 4.

123) A process according to claim 121 wherein the treatment is carried out with dimethylformamide at a concentration of about 10 percent to about 50 percent and at a pH of about 3.

124) A process according to claim 121 wherein the treatment is carried out with dimethylformamide at a concentration of about 20 percent to about 50 percent and at a pH of about 3.

125) A process according to claim 121 wherein the treatment is carried out with dimethylformamide at a concentration of about 20 percent and at a pH of about 3.

126) A process according to claim 121 wherein the treatment is carried out with dimethylformamide at a concentration of about 20 percent and pH of about 3.

127) A process, according to any of the above claims in which the recombinant source expressing the insulin is yeast.

128) A process according to claim 127 in which the yeast include genera Hansenula, Saccharomyces, Pichia, Kluyveromyces.

129) A process according to claim 127, in which the insulin expressed by a yeast strain is secreted into the extracellular medium.